

WHAT IS CLAIMED IS:

1 1. A method for converting text to concatenated voice by
2 utilizing a digital voice library and a set of playback rules, the digital voice library
3 including a plurality of speech items including words and syllables and a
4 corresponding plurality of voice recordings wherein each speech item corresponds
5 to at least one available voice recording, the method comprising:

6 training the digital voice library to associate each syllable speech item
7 with a literal text syllable of the particular syllable speech item.

1 2. The method of claim 1 further comprising:
2 receiving a sequence of words including known words that
3 correspond to word speech items in the digital voice library and including unknown
4 words;

5 converting each known word into a word speech item in accordance
6 with the digital voice library; and

7 for each unknown word, parsing the unknown word to determine a
8 sequence of literal text syllables and converting the text syllable sequence to a
9 sequence of syllable speech items in accordance with the digital voice library.

1 3. The method of claim 2 further comprising:
2 converting the sequence of word speech items and syllable speech
3 items into a sequence of voice recordings in accordance with the set of playback
4 rules.

1 4. The method of claim 3 further comprising:
2 generating voice data based on the sequence of voice recordings by
3 concatenating adjacent recordings in the sequence of voice recordings.

1 5. The method of claim 4 wherein training the digital voice
2 library further comprises:
3 utilizing a neural network having an input and an output to train the
4 digital voice library with the neural network receiving the literal text syllable of the

5 particular syllable speech item as input and with the neural network outputting the
6 associated syllable speech item.

1 6. The method of claim 4 wherein training the digital voice
2 library further comprises:
3 manually associating each syllable speech item with the literal text
4 syllable of the particular syllable speech item.

1 7. The method of claim 4 wherein, for each unknown word,
2 parsing and converting further comprises:
3 parsing the unknown word to determine a sequence of literal text
4 syllables and known words, and converting the sequence to a sequence of syllable
5 speech items and word speech items in accordance with the digital voice library.

1 8. The method of claim 7 wherein parsing further comprises:
2 parsing the unknown word in the forward direction to determine any
3 known words;
4 parsing the unknown word in the reverse direction to determine any
5 known words;
6 where any known words overlap, selecting the larger word;
7 parsing the unknown word in the forward direction to determine any
8 literal text syllables; and
9 parsing the unknown word in the reverse direction to determine any
10 literal text syllables.

1 9. The method of claim 7 wherein multiple voice recordings that
2 correspond to a single speech item represent various inflections of that single speech
3 item, and wherein converting the sequence of word speech items and syllable speech
4 items further comprises:
5 determining a desired inflection for each speech item in the sequence
6 of speech items based on the set of playback rules; and
7 determining a sequence of voice recordings by determining a voice
8 recording for each speech item based on the desired inflection for the particular

9 speech item and based on the available voice recordings that correspond to the
10 particular speech item.

1 10. The method of claim 7 wherein multiple voice recordings that
2 correspond to a single speech item represent various inflections and ligatures of that
3 single speech item, and wherein converting the sequence of word speech items and
4 syllable speech items further comprises:

5 determining a desired inflection and desired ligatures for each speech
6 item in the sequence of speech items based on the set of playback rules; and

7 determining a sequence of voice recordings by determining a voice
8 recording for each speech item based on the desired inflection and desired ligatures
9 for the particular speech item and based on the available voice recordings that
10 correspond to the particular speech item.

1 11. The method of claim 4 comprising:

2 for each unknown word, after the unknown word is parsed, storing
3 results of the parsing in the digital voice library so that a next encounter with the
4 same unknown word may be handled more efficiently.